dhec
Healthy People. Healthy Communities

September 7, 2016

Annie Godfrey, Chief
Water Quality Standards Section
U.S. Environmental Protection Agency, Region 4
61 Forsyth Street, SW
Atlanta, GA 30303

RE: Proposed Amendment of Regulation 61-68, *Water Classifications and Standards*
Preliminary Review Copy (not for final Agency action)
2016 Triennial Review (State of South Carolina)

Dear Ms. Godfrey:

The South Carolina Department of Health and Environmental Control (DHEC) initiated the regulation development process by issuing a Notice of Drafting, which was published in the State Register on February 26, 2016. Following an initial comment period, DHEC staff met with stakeholders on June 22, 2016, to discuss the Notice of Drafting and to receive targeted stakeholder input regarding the issues. Subsequently, the enclosed DHEC Board Agenda Item, which will be presented to the Board September 8, 2016, summarizes the proposed amendments to Regulation 61-68. We are projecting this will be published in the State Register in September 2016 for a formal comment period. Following this, legislative review is projected to occur in early 2017.

DHEC has proposed to amend R.61-68 APPENDIX, Water Quality Numeric Criteria for the Protection of Aquatic Life and Human Health Priority Toxic Pollutants and Non Priority Pollutants. The proposed revised language is added to reflect the EPA's most recent recommendations and guidance concerning ambient water quality criteria for the protection of human health for ninety-four chemical pollutants and concerning aquatic life water quality criteria for cadmium. This package is provided for a preliminary EPA review prior to formal submission of the Triennial package.

In response to your letter of November 13, 2015, we offer the following comments.

Recreational Criteria (SB Waters)

The EPA published updated recommended recreational water quality criteria on November 26, 2012. The Department has previously adopted enterococci criteria including a geometric mean (GM) of 35/100 mL and a single sample maximum of 104/100 mL for shellfish harvesting waters (SFH) and Class SA saltwaters (SA). The Department's current enterococci criteria for Class SB saltwaters (SB) include a GM of 35/100 mL and a single sample maximum of 501/100 mL.

EPA's 2012 recommended Recreational Water Quality Criteria are expressed as statistical values requiring a minimum sample size necessary for these calculations to be statistically valid and meaningful due to the variability of bacteria in the environment. Our typical instream data collection frequency (typically once every two months) does not lend itself to having sufficient samples in the same 30-day interval to provide a meaningful assessment of the statistical threshold value (STV) value. We would also note that the present R.61-68 bacteriological standards update in mid-2012 was finalized after an extensive assessment beginning in 2008 involving many stakeholders and a significant expenditure of manpower.

The incorporation of a STV into the State's Water Quality Standards in place of our current single sample maximum for SB waters is not being considered at the present time. The enclosed Assessment of Estuary Enterococcus Data indicates a single sample maximum of 501/100 mL is less than the 99th percentile of samples analyzed.

Ammonia Criteria

The Department is reviewing the updated recommended ammonia criteria. The 2013 updated criteria (CMC = 17 µg/L, CCC = 1.9 µg/L) are more stringent than the previously published 1999 criteria (CMC – 24 µg/L, CCC = 4.5 µg/L). The Department is collecting more information in order to make an informed decision regarding the adoption of the updated ammonia criteria. At this time, the Department has made a decision to not proceed with an update to ammonia criteria during this triennial review to better evaluate a targeted adoption strategy verses one criteria statewide.

Selenium Criteria

On July 13, 2016, EPA published recommended aquatic life ambient water quality criteria for selenium in freshwater. The Department is currently reviewing the recently published recommended criteria and will consider adoption during the next triennial review.

Human Health Updates

The Department proposes amending the text of Regulation 61-68 APPENDIX, Water Quality Numeric Criteria for the Protection of Aquatic Life and Human Health to include the updated criteria for the ninety-four chemical pollutants.

Nutrient Development

The Department completed the process of promulgating numeric nutrient criteria for lakes of forty acres or more in 2001. These lake standards are implemented with TMDLs and permit limits on dischargers to protect those downstream uses (lakes).

The Department has a phased nutrient promulgation schedule to focus initially on criteria for estuaries and then develop criteria for rivers and streams. The Department tentatively plans to move forward with numeric nutrient criteria for estuaries during 2017 (for the next Triennial cycle) and will address rivers and streams during the subsequent triennial review period. The reason for focusing initially on criteria for estuaries is that we believe we have gathered substantial data to support that effort and this data is currently lacking to support the development of nutrient criteria for rivers and streams. This

phased approach is part of the State's Adoption Plan for Numeric Nutrient Water Quality Criteria 2014, which is consistent with the CWA was approved by the EPA Region 4 on August 31, 2016.

EPA Regulation Revisions (40 CFR Part 131)

The Department has reviewed Water Quality Standard Regulatory Revisions and determined that no changes to Regulation 61-68 are necessary to be consistent with EPA's new regulation.

Flow as a Water Quality Standard

South Carolina, under the South Carolina Surface Water Withdrawal, Permitting Use, and Reporting Act, effective January 1, 2011, has already set protective stream flow criteria and a permitting program for water withdrawals and uses of surface waters. This has previously been addressed within the scope of Regulation 61-119, Surface Water Withdrawal, Permitting, and Reporting. Therefore, the Department is not proposing changes currently.

Should you have any questions please contact Michael Montebello (montebmj@dhec.sc.gov) at (803) 898-4228.

Sincerely,

David G. Baize, Chief
Bureau of Water

Enclosures: as stated

cc: Lydia Mayo, EPA (with enclosure)
Ann Clark, DHEC
Jeff deBessonet, DHEC
Michael Montebello, DHEC
Andrew Edwards, DHEC

Assessment of Estuary Enterococcus Data

All data used for this assessment were downloaded from STORET and includes all data collected from all SA, SB, and SFH waters between the dates of January 1, 2013 to December 31, 2014, excluding beach monitoring data. We do not feel that beach monitoring data is an accurate representation of coastal estuaries that are inland of the oceans. If a value was reported from the lab as "Present Below Quantification Limit" the result value was changed to 10/100 mL. Only one value was reported from the lab as "Present Above Quantification Limit". This value was changed to the maximum value in the dataset of 3390/100 mL. This is the most conservative approach when calculating percentiles. A total of 1207 records were included in the dataset.

Percentile (%)	Value (MPN/100 mL)
75	30
80	35
90	84
95	153.6
99	510.56

DEPARTMENT OF HEALTH AND ENVIRONMENTAL CONTROL

SUMMARY SHEET

September 8, 2016

(x) ACTION/DECISION
( ) INFORMATION

I. TITLE: Proposed Amendment of Regulation 61-68, *Water Classifications and Standards* Legislative Review Required

II. SUBJECT: Request Initial Approval to Publish a Notice of Proposed Regulation in the State Register to Provide Opportunity for Public Comment

III. FACTS:

1. Regulation 61-68 was promulgated pursuant to S.C. Code Section 48-1-10 et seq. R.61-68 establishes appropriate goals and water uses to be achieved, maintained, and protected; general rules and water quality criteria to protect classified and existing water uses; and an antidegradation policy to protect and maintain the levels of water quality necessary to support and maintain those existing and classified uses. In accordance with Section 303(c)(2)(B) of the Federal Clean Water Act ("CWA"), the Department reviews, and amend at its discretion, this regulation once every three years in order to incorporate desirable most recently published Federal criterion recommendations and guidance. Hence, this review process is often referred to as the "triennial review."

2. A Notice of Drafting was published in the State Register on February 26, 2016, initiating the regulation development process. The Department emailed the details to interested parties, as well as placed the notice on the Department's website encouraging submittals for the formal comment period and providing contact information. The interested parties included, but were not limited to, representatives of environmental associations; trade, industrial, agricultural, and forestry organizations; public health, scientific, and professional groups; other Federal, State and local government agencies, and members of the general public. A copy of this Notice is submitted as Attachment F.

3. On June 22, 2016, the Department met with stakeholders to discuss the Notice of Drafting and to receive stakeholder input regarding the issues. The Department presented the proposed adoption of human health water quality criteria from EPA. General discussion continued and stakeholders were encouraged to provide written comments regarding the Department proposals.

4. The Department proposes that the amendment of R.61-68 will strengthen and improve the existing regulation and make appropriate revisions of the State's water quality standards in accordance with Section 303(c)(2)(B) of the CWA. The issues specifically addressed in the proposed revisions are:

Issue 1: Adoption of federal ambient water quality criteria for the protection of human health for ninety-four chemical pollutants;

Issue 2: Adoption of federal aquatic life water quality criteria for cadmium.

5. A Table of Revisions and the Text of the Proposed Amendment are submitted as Attachments B and C.

6. The proposed amendment was internally reviewed by appropriate Department staff for compatibility with other regulations.

7. A Summary of Public Comments and Department Responses is submitted as Attachment E.

8. Department staff is requesting initial approval to public notice the proposed regulation. If approval is granted, a Notice of Proposed Regulation will be published in the State Register on September 23, 2016; a proposed Staff Information Forum will be held on October 24, 2016; and a public hearing before the DHEC Board will be scheduled for December 8, 2016. A draft State Register Notice of Proposed Regulation is submitted as Attachment D.

IV. ANALYSIS: The Department proposes these amendments in accordance with 33 U.S.C. Section 303(c)(2)(B) of the CWA. The proposed changes to the regulation include the following:

- The proposed changes to R.61-68 relating to the adoption of the ambient water quality criteria for the protection of human health for ninety-four chemical pollutants as published by EPA are based on sound scientific principles and are required in order to comply with the goals of 33 U.S.C. Sections 101(a)(2) and 303(c) of the Clean Water Act for protection and maintenance of the uses of the waters of the State. Adoption of this standard will use the most up-to-date science for these standards.

- The proposed changes to R.61-68 relating to the adoption of the aquatic life water quality criteria for cadmium as published by EPA are based on sound scientific principles and are required in order to comply with the goals of 33 U.S.C. Sections 101(a)(2) and 303(c) of the Clean Water Act for protection and maintenance of the uses of the waters of the State. Adoption of this standard will use the most up-to-date science for these standards.

A Statement of Need and Reasonableness and a Statement of Rationale is submitted as Attachment A.

V. RECOMMENDATION: Department staff recommends that the Board grant approval to publish a Notice of Proposed Regulation in the State Register, hold a Staff Informational Forum on October 24, 2016, to provide opportunity for public comment, to receive and consider comments, and allow staff to proceed with a public hearing before the Board.

Submitted by:

David Baize
Chief, Bureau of Water

Submitted by:

Myra C. Reece
Director of Environmental Affairs

Attachments:

A. Statement of Need and Reasonableness and Statement of Rationale
B. Table of Revisions
C. Text of Proposed Amendment of R.61-68
D. Draft of State Register Notice of Proposed Regulation
E. Summary of Public Comments and Department Responses
F. State Register Notice of Drafting published on February 26, 2016

ATTACHMENT A
STATEMENT OF NEED AND REASONABLENESS
STATEMENT OF RATIONALE
PROPOSED AMENDMENT OF R.61-68, WATER CLASSIFICATIONS AND STANDARDS
September 8, 2016

Statement of Need and Reasonableness:

The statement of need and reasonableness was determined by staff analysis pursuant to S.C. Code Ann. Section 1-23-115(C)(1)-(3) and (9)-(11) (2005):

DESCRIPTION OF REGULATIONS: Amendment of Regulation 61-68, *Water Classifications and Standards.*

Purpose: Proposed amendment of R.61-68 will clarify, strengthen, and improve the overall quality of the existing regulation and make appropriate revisions of the State's water quality standards in accordance with 33 U.S.C. Section 303(c)(2)(B) of the Federal Clean Water Act ("CWA").

Legal Authority: 1976 Code Sections 48-1-10 et seq.

Plan for Implementation: The proposed amendments would be incorporated within R.61-68 upon approval of the General Assembly and publication in the State Register. The proposed amendments will be implemented in the same manner in which the present regulation is implemented.

DETERMINATION OF NEED AND REASONABLENESS OF THE PROPOSED REGULATIONS BASED ON ALL FACTORS HEREIN AND EXPECTED BENEFIT:

The Department proposes these amendments in accordance with 33 U.S.C. Section 303(c)(2)(B) of the CWA. The proposed amendments to R.61-68 include the following:

- Modification and adoption of federal ambient water quality criteria for the protection of human health for ninety-four chemical pollutants to reflect the most current final published criteria in accordance with Sections 304(a) and 307(a) of the CWA. This modification amends R.61-68 APPENDIX, Water Quality Numeric Criteria for the Protection of Aquatic Life and Human Health Priority Toxic Pollutants and Non Priority Pollutants.

- Modification and adoption of federal aquatic life water quality criteria for cadmium to reflect the most current final published criteria in accordance with Sections 304(a) and 307(a) of the CWA. This modification amends R.61-68 APPENDIX, Water Quality Numeric Criteria for the Protection of Aquatic Life and Human Health Priority Toxic Pollutants.

The proposed changes to R.61-68 relating to human health criteria and cadmium criteria are reasonable because the stated criteria in the amendments are based on sound scientific principles and comply with the goals of 33 U.S.C. Sections 101(a)(2) and 303(c) of the CWA for protection and maintenance of the uses of the waters of the State. These changes reflect the EPA's most recent criteria.

DETERMINATION OF COSTS AND BENEFITS: Existing staff and resources will be utilized to implement these amendments to the regulation. No anticipated additional cost will be incurred by the State if the revisions are implemented, and no additional State funding is being requested.

In reviewing the potential for significant economic impact of the proposed amendment to R.61-68, the Department specifically evaluated situations in which costs would most likely be incurred by the regulated community. These estimates addressed the specific revisions by issue after determining those of greatest potential impact. The Department found that the overall impact to the State's political subdivisions or the regulated community as a whole was not likely to be significant in that the existing standards would have incurred similar cost or the fact that the standards required under the amendment will be substantially consistent with the current guidelines and review guidelines utilized by the Department.

UNCERTAINTIES OF ESTIMATES: Minimal.

EFFECT ON ENVIRONMENT AND PUBLIC HEALTH: Implementation of these amendments will not compromise the protection of the environment or the health and safety of the citizenry of the State. The amendments to R.61-68 seek to promote and protect aquatic life and human health by the regulation of pollutants into waters of the State.

DETRIMENTAL EFFECT ON THE ENVIRONMENT AND PUBLIC HEALTH IF THE REGULATIONS ARE NOT IMPLEMENTED: Failure by the Department to incorporate appropriately protective water quality standards in R.61-68 that are the basis for issuance of National Pollutant Discharge Elimination System ("NPDES") permits, stormwater permits, wasteload and load allocations, groundwater remediation plans, and multiple other program areas will lead to contamination of the waters of the State with detrimental effects on the health of flora and fauna in the State as well as the citizens of South Carolina.

Statement of Rationale:

The Department proposes to amend R.61-68 to strengthen and improve the existing regulation and make appropriate revisions of the State's water quality standards in accordance with 33 U.S.C. Section 303(c)(2)(B) of the Federal Clean Water Act ("CWA"). In accordance with Section 303(c)(2)(B) of the CWA, the Department reviews, and amends at its discretion, this regulation once every three years in order to incorporate desirable most recently published Federal criterion recommendations and guidance. Hence, this review process is often referred to as the "triennial review." The Department proposes to adopt a revised standard for ambient water quality criteria for the protection of human health for ninety-four chemical pollutants, and a revised standard for aquatic life water quality criteria for cadmium to reflect the most current final published criteria in accordance with Sections 304(a) and 307(a) of the CWA.

ATTACHMENT B
TABLE OF REVISIONS
PROPOSED AMENDMENT OF R.61-68, WATER CLASSIFICATIONS AND STANDARDS
September 8, 2016

Note: The sections cited in this listing reflect the sections as they are numbered in the overstrike/underline version of Attachment C in the Board agenda item and are listed by issue. We do not specify any revised numbering after the addition or deletion of text, but will note those changes in the text in Attachment C of the Board agenda item. Each regulation is listed separately below.

Section Citation and Explanation of Change

(1) Revision of Federal toxics criteria to reflect the most current final published criteria in accordance with Sections 304(a) and 307(a) of the CWA.

R.61-68 APPENDIX, Water Quality Numeric Criteria for the Protection of Aquatic Life and Human Health Priority Toxic Pollutants and Non Priority Pollutants - The proposed revised language is added to reflect the EPA's most recent recommendations and guidance concerning ambient water quality criteria for the protection of human health for ninety-four chemical pollutants and concerning aquatic life water quality criteria for cadmium.

ATTACHMENT C
TEXT OF PROPOSED AMENDMENT OF
R.61-68, WATER CLASSIFICATIONS AND STANDARDS
September 8, 2016

Text of Proposed Amendment for Public Notice and Comment

~~Indicates Matter Stricken~~
Indicates New Matter

R.61-68 APPENDIX, Water Quality Numeric Criteria for the Protection of Aquatic Life and Human Health

Amend Priority Toxic Pollutants in its entirety to read:

APPENDIX: WATER QUALITY NUMERIC CRITERIA FOR THE PROTECTION OF AQUATIC LIFE AND HUMAN HEALTH

This appendix contains three charts (priority pollutants, nonpriority pollutants, and organoleptic effects) of numeric criteria for the protection of human health and aquatic life. The appendix also contains three attachments which address hardness conversions and application of ammonia criteria. Footnotes specific to each chart follow the chart. General footnotes pertaining to all are at the end of the charts prior to the attachments. The numeric criteria developed and published by EPA are hereby incorporated into this regulation. Please refer to the text of the regulation for other general information and specifications in applying these numeric criteria.

PRIORITY TOXIC POLLUTANTS

Priority Pollutant		CAS Number	Freshwater Aquatic Life		Saltwater Aquatic Life		Human Health			FR Cite/ Source
			CMC (µg/L)	CCC (µg/L)	CMC (µg/L)	CCC (µg/L)	For Consumption of: Water & Organism (µg/L)	Organism Only (µg/L)	MCL (µg/L)	
1	Antimony	7440360					5.6 B, ee	640 B, ee	6 ee	65FR66443 SDWA
2	Arsenic	7440382	340 A, D, K	150 A, D, K	69 A, D, Y	36 A, D, Y	10 C	10 C	10 C	65FR31682 57FR60848 SDWA
3	Beryllium	7440417					J, ee	J, ee	4 ee	65FR31682 SDWA
4	Cadmium	7440439	~~0.53~~ 0.49 D, E, ~~K~~ Y	~~0.10~~ 0.25 D, E, ~~K~~ Y	~~43~~ 33 D, Y	~~9.3~~ 7.9 D, Y	J, ee	J, ee	5 ee	~~65FR31682~~ 81FR19176 SDWA
5a	Chromium III	16065831	580 D, E, K	28 D, E, K			J, ee	J, ee	100 Total ee	EPA820/B-96-001 65FR31682 SDWA
5b	Chromium VI	18540299	16 D, K	11 D, K	1,100 D, Y	50 D, Y	J, ee	J, ee	100 Total ee	65FR31682 SDWA
6	Copper	7440508	3.8 D, E, K, Z, ll	2.9 D, E, K, Z, ll	5.8 D, Z, Y, cc	3.7 D, Z, Y, cc	1,300 T, ee			65FR31682

Priority Pollutant		CAS Number	Freshwater Aquatic Life		Saltwater Aquatic Life		Human Health			FR Cite/ Source
			CMC (µg/L)	CCC (µg/L)	CMC (µg/L)	CCC (µg/L)	For Consumption of: Water & Organism (µg/L)	Organism Only (µg/L)	MCL (µg/L)	
7	Lead	7439921	14 D, E, Y	0.54 D, E, Y	220 D, Y	8.5 D, Y				65FR31682
8	Mercury	7439976	1.6 D, K, dd	0.91 D, K, dd	2.1 D, bb, dd	1.1 D, bb, dd	0.050 B, ee	0.051 B, ee	2 ee	65FR31682 SDWA
9	Nickel	7440020	150 D, E, K	16 D, E, K	75 D, Y	8.3 D, Y	610 B, ee	4, 600 B, ee		65FR31682
10	Selenium	7782492	L, Q, S	5.0 S	290 D, aa	71 D, aa	170 Z, ee	4,200 ee	50 ee	65FR31682 65FR66443 SDWA
11	Silver	7440224	0.37 D, E, G		2.3 D, G					65FR31682
12	Thallium	7440280					0.24	0.47	2 ee	68FR75510 SDWA
13	Zinc	7440666	37 D, E, K	37 D, E, K	95 D, Y	86 D, Y	7,400 T, ee	26,000 T, ee		65FR31682 65FR66443
14	Cyanide	57125	22 K, P	5.2 K, P	1 P, Y	1 P, Y	~~140~~ 4 ee, jj	~~140~~ 400 ee, jj	200 ee	EPA820/B-96-001 57FR60848 ~~68FR75510~~ 80FR36986 SDWA
15	Asbestos	1332214							7 million fibers/L I, ee	57FR60848
16	2, 3, 7, 8-TCDD (Dioxin)	1746016						0.046 ppq O, C	30ppq O, C	State Standard SDWA
17	Acrolein	107028	3	3			~~6~~ 3 ee, nn	~~9~~ 400 ee, nn		~~74FR27535~~ 80FR36986 74FR46587
18	Acrylonitrile	107131					~~0.051~~ 0.061 B, C	~~0.25~~ 7.0 B, C		~~65FR66443~~ 80FR36986

Priority Pollutant		CAS Number	Freshwater Aquatic Life		Saltwater Aquatic Life		Human Health			FR Cite/ Source
			CMC (µg/L)	CCC (µg/L)	CMC (µg/L)	CCC (µg/L)	For Consumption of: Water & Organism (µg/L)	Organism Only (µg/L)	MCL (µg/L)	
19	Benzene	71432					~~2.2~~ 0.58 B, C, ~~hh~~	~~51~~ 16 B, C, ~~hh~~	5 C	IRIS 01/19/00 ~~65FR66443~~ 80FR36986 SDWA
20	Bromate	15541454							10 C	SDWA
21	Bromoform	75252					~~4.3~~ 7.0 B, C	~~140~~ 120 B, C	80 Total THMs C	~~65FR66443~~ 80FR36986 SDWA
22	Bromoacetic acid	79083							60 Total HAA5 C.mm	SDWA
23	Carbon Tetrachloride	56235					~~0.23~~ 0.4 B, C	~~1.6~~ 5 B, C	5 C	65FR66443 SDWA
24	Chlorite	67481							100	SDWA
25	Chlorobenzene	108907					~~130~~ 100 T, ee	~~1,600~~ 800 T, ee	100 T, ee	~~68FR75510~~ 80FR36986 SDWA
26	Chlorodibromomethane	124481					~~0.40~~ 0.80 B, C	~~13~~ 21 B, C	80 Total THMs C	~~65FR66443~~ 80FR36986 SDWA
27	Chloroform	67663					~~5.7~~ 60 B, C, ~~hh~~	~~470~~ 2,000 B, C, ~~hh~~	80 Total THMs C	~~62FR42160~~ 80FR36986 SDWA
28	Dibromoacetic acid	631641							60 Total HAA5 C, mm	SDWA
29	Dichloroacetic acid	79436							60 Total HAA5 C,mm	SDWA
30	Dichlorobromomethane	75274					~~0.55~~ 0.95 B, C	~~17~~ 27 B, C	80 Total THMs C	~~65FR66443~~ 80FR36986 SDWA

Priority Pollutant		CAS Number	Freshwater Aquatic Life		Saltwater Aquatic Life		Human Health			FR Cite/ Source
			CMC (µg/L)	CCC (µg/L)	CMC (µg/L)	CCC (µg/L)	For Consumption of: Water & Organism (µg/L)	Organism Only (µg/L)	MCL (µg/L)	
31	1, 2-Dichloroethane	107062					~~0.38~~ 9.9 B, C	~~37~~ 650 B, C	5 C	~~65FR66443~~ 80FR36986 SDWA
32	1, 1-Dichloroethylene	75354					~~330~~ 300 ee	~~7,100~~ 20,000 ee	7 C	~~68FR75510~~ 80FR36986 SDWA
33	1, 2-Dichloropropane	78875					~~0.50~~ 0.90 B, C	~~15~~ 31 B, C	5 C	~~65FR66443~~ 80FR36986 SDWA
34	1, 3-Dichloropropene	542756					~~0.34~~ 0.27 ee	~~21~~ 12 ee		~~68FR75510~~ 80FR36986
35	Ethylbenzene	100414					~~530~~ 68 ee	~~2,100~~ 130 ee	700 ee	~~68FR75510~~ 80FR36986 SDWA
36	Methyl Bromide	74839					~~47~~ 100 B, ee	~~1,500~~ 10,000 B, ee		~~65FR66443~~ 80FR36986
37	Methylene Chloride	75092					~~4.6~~ 20 B, C	~~590~~ 1,000 B, C	5 C	~~65FR66443~~ 80FR36986 SDWA
38	Monochloroacetic acid	79118							60 Total HAA5 C,mm	SDWA
39	1, 1, 2, 2-Tetrachloroethane	79345					~~0.17~~ 0.20 B, C	~~4.0~~ 3.0 B, C		~~65FR66443~~ 80FR36986
40	Tetrachloroethylene	127184					~~0.69~~ 10 C	~~3.3~~ 29 C	5 C	~~65FR66443~~ 80FR36986 SDWA
41	Toluene	108883					~~1,300~~ 57 ee	~~15,000~~ 520 ee	1,000 ee	~~68FR75510~~ 80FR36986 SDWA
42	1,2-Trans-Dichloroethylene	156605					~~140~~ 100 ee	~~10,000~~ 4,000 ee	100 ee	~~68FR75510~~ 80FR36986 SDWA

Priority Pollutant		CAS Number	Freshwater Aquatic Life		Saltwater Aquatic Life		Human Health			FR Cite/ Source
			CMC (µg/L)	CCC (µg/L)	CMC (µg/L)	CCC (µg/L)	For Consumption of: Water & Organism (µg/L)	Organism Only (µg/L)	MCL (µg/L)	
43	Trichloroacetic acid	79039							60 Total HAA5 C,mm	SDWA
44	1, 1, 1-Trichloroethane	71556					10,000 J, ee	200,000 J, ee	200 ee	~~65FR31682~~ 80FR36986 SDWA
45	1, 1, 2-Trichloroethane	79005					~~0.59~~ 0.55 B, C	~~16~~ 8.9 B, C	5 C	~~65FR66443~~ 80FR36986 SDWA
46	Trichloroethylene	79016					~~2.5~~ 0.6 C	~~30~~ 7 C	5 C	~~65FR66443~~ 80FR36986 SDWA
47	Vinyl Chloride	75014					~~0.025~~ 0.022 kk	~~2.4~~ 1.6 kk	2 C	~~68FR75510~~ 80FR36986 SDWA
48	2-Chlorophenol	95578					~~81~~ 30 B, T, ee	~~150~~ 800 B, T, ee		~~65FR66443~~ 80FR36986
49	2, 4-Dichlorophenol	120832					~~77~~ 10 B, T, ee	~~290~~ 60 B, T, ee		~~65FR66443~~ 80FR36986
50	2, 4-Dimethylphenol	105679					~~380~~ 100 B, T, ee	~~850~~ 3,000 B, T, ee		~~65FR66443~~ 80FR36986
51	2-Methyl- 4, 6-Dinitrophenol	534521					~~13~~ 2 ee	~~280~~ 30 ee		~~65FR66443~~ 80FR36986
52	2, 4-Dinitrophenol	51285					~~69~~ 10 B, ee	~~5,300~~ 300 B, ee		~~65FR66443~~ 80FR36986
53	Pentachlorophenol	87865	19 F, K	15 F, K	13 Y	7.9 Y	~~0.27~~ 0.03 B, C	~~3.0~~ 0.04 B, C, H	1 C	65FR31682 ~~65FR66443~~ 80FR36986 SDWA
54	Phenol	108952					~~10,000~~ 4,000 T, ee, nn	~~860,000~~ 300,000 T, ee, nn		~~74FR27535~~ ~~74FR46587~~ 80FR36986

Priority Pollutant		CAS Number	Freshwater Aquatic Life		Saltwater Aquatic Life		Human Health			FR Cite/ Source
			CMC (µg/L)	CCC (µg/L)	CMC (µg/L)	CCC (µg/L)	For Consumption of: Water & Organism (µg/L)	Organism Only (µg/L)	MCL (µg/L)	
55	2, 4, 6-Trichlorophenol	88062					~~1.4~~ 1.5 B, C, ~~T~~	~~2.4~~ 2.8 B, C, T		~~65FR66443~~ 80FR36986
56	Acenaphthene	83329					~~670~~ 70 B, T, ee	~~990~~ 90 B, T, ee		~~65FR66443~~ 80FR36986
57	Anthracene	120127					~~8,300~~ 300 B, ee	~~40,000~~ 400 B, ee		~~65FR66443~~ 80FR36986
58	Benzidine	92875					~~0.000086~~ 0.00014 B, C	~~0.00020~~ 0.011 B, C		~~65FR66443~~ 80FR36986
59	Benzo (a) Anthracene	56553					~~0.0038~~ 0.0012 B, C	~~0.018~~ 0.0013 B, C		~~65FR66443~~ 80FR36986
60	Benzo (a) Pyrene	50328					~~0.0038~~ 0.00012 B, C	~~0.018~~ 0.00013 B, C	0.2 C	~~65FR66443~~ 80FR36986 SDWA
61	Benzo (b) Fluoranthene	205992					~~0.0038~~ 0.0012 B, C	~~0.018~~ 0.0013 B, C		~~65FR66443~~ 80FR36986
62	Benzo (k) Fluoranthene	207089					~~0.0038~~ 0.012 B, C	~~0.018~~ 0.013 B, C		~~65FR66443~~ 80FR36986
63	Bis-2-Chloroethyl Ether	111444					0.030 B, C	~~0.53~~ 2.2 B, C		~~65FR66443~~ 80FR36986
64	~~Bis-2-Chloroisopropyl Ether~~ Bis(2-Chloro-1-Methylethyl) Ether	108601					~~1,400~~ 200 B, ee	~~65,000~~ 4,000 B, ee		~~65FR66443~~ 80FR36986
65	~~Bis-s2-Ethylhexyl Phthalate (DEHP)~~ Bis-2-Ethylhexyl Phthalate (DEHP)	117817	v	v	v	v	~~1.2~~ 0.32 B, C	~~2.2~~ 0.37 B, C	6 C	~~65FR66443~~ 80FR36986 SDWA

Priority Pollutant		CAS Number	Freshwater Aquatic Life		Saltwater Aquatic Life		Human Health			FR Cite/ Source
			CMC (µg/L)	CCC (µg/L)	CMC (µg/L)	CCC (µg/L)	For Consumption of: Water & Organism (µg/L)	Organism Only (µg/L)	MCL (µg/L)	
66	Butylbenzene Phthalate	85687	ii	ii	ii	ii	~~1,500~~ 0.10 B, ee	~~1,900~~ 0.10 B, ee		~~65FR66443~~ 80FR36986
67	2-Chloronaphthalene	91587					~~1,000~~ 800 B, ee	~~1,600~~ 1,000 B, ee		~~65FR66443~~ 80FR36986
68	Chrysene	218019					~~0.0038~~ 0.12 B, C	~~0.018~~ 0.13 B, C		~~65FR66443~~ 80FR36986
69	Dibenzo(a,h)Anthracene	53703					~~0.0038~~ 0.00012 B, C	~~0.018~~ 0.00013 B, C		~~65FR66443~~ 80FR36986
70	1, 2-Dichlorobenzene	95501					~~420~~ 1,000 ee	~~1,300~~ 3,000 ee	600 ee	~~68FR75510~~ 80FR36986 SDWA
71	1, 3-Dichlorobenzene	541731					~~320~~ 7 ee	~~960~~ 10 ee		~~65FR66443~~ 80FR36986
72	1, 4-Dichlorobenzene	106467					~~63~~ 300 ee	~~190~~ 900 ee	75 ee	~~68FR75510~~ 80FR36986 SDWA
73	3, 3'-Dichlorobenzidine	91941					~~0.021~~ 0.049 B, C	~~0.028~~ 0.15 B, C		~~65FR66443~~ 80FR36986
74	Diethyl Phthalate	84662	ii	ii	ii	ii	~~17,000~~ 600 B, ee	~~44,000~~ 600 B, ee		~~65FR66443~~ 80FR36986
75	Dimethyl Phthalate	~~13113~~ 131113	ii	ii	ii	ii	~~270,000~~ 2,000 B, ee	~~1,100,000~~ 2,000 B, ee		~~65FR66443~~ 80FR36986
76	Di-n-butyl Phthalate	84742	ii	ii	ii	ii	~~2,000~~ 20 B, ee	~~4,500~~ 30 B, ee		~~65FR66443~~ 80FR36986
77	2, 4-Dinitrotoluene	121142					~~0.11~~ 0.049 C	~~3.4~~ 1.7 C		~~65FR66443~~ 80FR36986

Priority Pollutant		CAS Number	Freshwater Aquatic Life		Saltwater Aquatic Life		Human Health			FR Cite/ Source
			CMC (µg/L)	CCC (µg/L)	CMC (µg/L)	CCC (µg/L)	For Consumption of: Water & Organism (µg/L)	Organism Only (µg/L)	MCL (µg/L)	
78	1, 2-Diphenylhydrazine	122667					~~0.036~~ 0.03 B, C	0.20 B, C		65FR66443 80FR36986
79	Fluoranthene	206440					~~130~~ 20 B, ee	~~140~~ 20 B, ee		~~65FR66443~~ 80FR36986
80	Fluorene	86737					~~1,100~~ 50 B, ee	~~5,300~~ 70 B, ee		~~65FR66443~~ 80FR36986
81	Hexachlorobenzene	118741					~~0.00028~~ 0.000079 B, C	~~0.00029~~ 0.000079 B, C	1 C	~~65FR66443~~ 80FR36986 SDWA
82	Hexachlorobutadiene	87683					~~0.44~~ 0.01 B, C	~~18~~ 0.01 B, C		~~65FR66443~~ 80FR36986
83	Hexachlorocyclo-pentadiene	77474					~~40~~ 4 T, ee	~~1100~~ 4 T, ee	50 ee	~~68FR75510~~ 80FR36986 SDWA
84	Hexachloroethane	67721					~~1.4~~ 0.1 B, C	~~3.3~~ 0.1 B, C		~~65FR66443~~ 80FR36986
85	Indeno 1,2,3(cd) Pyrene	193395					~~0.0038~~ 0.0012 B, C	~~0.018~~ 0.0013 B, C		~~65FR66443~~ 80FR36986
86	Isophorone	78591					~~35~~ 34 B, C	~~960~~ 1,800 B, C		~~65FR66443~~ 80FR36986
87	Nitrobenzene	98953					~~17~~ 10 B, ee	~~690~~ 600 B, H, T, ee		~~65FR66443~~ 80FR36986
88	N-Nitrosodimethylamine	62759					0.00069 B, C	3.0 B, C		65FR66443

Priority Pollutant		CAS Number	Freshwater Aquatic Life		Saltwater Aquatic Life		Human Health			FR Cite/ Source
			CMC (µg/L)	CCC (µg/L)	CMC (µg/L)	CCC (µg/L)	For Consumption of: Water & Organism (µg/L)	Organism Only (µg/L)	MCL (µg/L)	
89	N-Nitrosodi-n-Propylamine	621647					0.0050 B, C	0.51 B, C		65FR66443
90	N-Nitrosodiphenylamine	86306					3.3 B, C	6.0 B, C		65FR66443
91	Pyrene	129000					~~830~~ 20 B, ee	~~4,000~~ 30 B, ee		~~65FR66443~~ 80FR36986
92	1, 2, 4-Trichlorobenzene	120821					~~35~~ 0.071 ee	~~70~~ 0.076 ee	70 ee	~~68FR75510~~ 80FR36986 SDWA
93	Aldrin	309002	3.0 G, X		1.3 G, X		~~0.000049~~ 0.00000077 B, C	~~0.000050~~ 0.00000077 B, C		65FR31682 ~~65FR66443~~ 80FR36986
94	alpha-BHC	319846					~~0.0026~~ 0.00036 B, C	~~0.0049~~ 0.00039 B, C		~~65FR66443~~ 80FR36986
95	beta-BHC	319857					~~0.0091~~ 0.0080 B, C	~~0.017~~ 0.014 B, C		~~65FR66443~~ 80FR36986
96	gamma-BHC (Lindane)	58899	0.95 K		0.16 G		~~0.98~~ 4.2 ee	~~1.8~~ 4.4 ee	0.2 C	65FR31682 ~~68FR75510~~ 80FR36986 SDWA
97	Chlordane	57749	2.4 G	0.0043 G, X	0.09 G	0.004 G, X	~~0.00080~~ 0.00031 B, C	~~0.00081~~ 0.00032 B, C	2 C	65FR31682 ~~65FR66443~~ 80FR36986 SDWA
98	4, 4'-DDT	50293	1.1 G, gg	0.001 G, X, gg	0.13 G, gg	0.001 G, X, gg	~~0.00022~~ 0.000030 B, C	~~0.00022~~ 0.000030 B, C		65FR31682 ~~65FR66443~~ 80FR36986
99	4, 4'-DDE	72559					~~0.00022~~ 0.000018 B, C	~~0.00022~~ 0.000018 B, C		~~65FR66443~~ 80FR36986

Priority Pollutant		CAS Number	Freshwater Aquatic Life		Saltwater Aquatic Life		Human Health			FR Cite/ Source
			CMC (µg/L)	CCC (µg/L)	CMC (µg/L)	CCC (µg/L)	For Consumption of: Water & Organism (µg/L)	Organism Only (µg/L)	MCL (µg/L)	
100	4, 4'-DDD	72548					~~0.00031~~ 0.00012 B, C	~~0.00031~~ 0.00012 B, C		~~65FR66443~~ 80FR36986
101	Dieldrin	60571	0.24 K	0.056 K, N	0.71 G	0.0019 G, X	~~0.000052~~ 0.0000012 B, C	~~0.000054~~ 0.0000012 B, C		65FR31682 ~~65FR66443~~ 80FR36986
102	alpha-Endosulfan	959988	0.22 G, W	0.056 G, W	0.034 G, W	0.0087 G, W	~~62~~ 20 B, ee	~~89~~ 30 B, ee		65FR31682 ~~65FR66443~~ 80FR36986
103	beta-Endosulfan	33213659	0.22 G, W	0.056 G, W	0.034 G, W	0.0087 G, W	~~62~~ 20 B, ee	~~89~~ 40 B, ee		65FR31682 ~~65FR66443~~ 80FR36986
104	Endosulfan Sulfate	1031078					~~62~~ 20 B, ee	~~89~~ 40 B, ee		~~65FR31682~~ ~~65FR66443~~ 80FR36986
105	Endrin	72208	0.086 K	0.036 K, N	0.037 G	0.0023 G, X	~~0.059~~ 0.03 ee	~~0.060~~ 0.03 ee	2 ee	68FR75510 80FR36986 SDWA
106	Endrin Aldehyde	7421934					~~0.29~~ 1 B, ee	~~0.30~~ 1 B, H, ee		~~65FR66443~~ 80FR36986
107	Heptachlor	76448	0.52 G	0.0038 G, X	0.053 G	0.0036 G, X	~~0.000079~~ 0.0000059 B, C	~~0.000079~~ 0.0000059 B, C	0.4 C	65FR31682 ~~65FR66443~~ 80FR36986 SDWA
108	Heptachlor Epoxide	1024573	0.52 G, U	0.0038 G, U, X	0.053 G, U	0.0036 G, U, X	~~0.000039~~ 0.000032 B, C	~~0.000039~~ 0.000032 B, C	0.2 C	65FR31682 ~~65FR66443~~ 80FR36986 SDWA
109	Polychlorinated Biphenyls PCBs	--		0.014 M, X		0.03 M, X	0.000064 B, C, M	0.000064 B, C, M	0.5 C	65FR31682 65FR66443 SDWA

Priority Pollutant		CAS Number	Freshwater Aquatic Life		Saltwater Aquatic Life		Human Health			FR Cite/ Source
			CMC (µg/L)	CCC (µg/L)	CMC (µg/L)	CCC (µg/L)	For Consumption of: Water & Organism (µg/L)	Organism Only (µg/L)	MCL (µg/L)	
110	Toxaphene	8001352	0.73	0.0002 X	0.21	0.0002 X	~~0.00028~~ 0.00070 B, C	~~0.00028~~ 0.00071 B, C	3 C	65FR31682 ~~65FR66443~~ 80FR36986 SDWA
111	3-Methyl-4-Chlorophenol	59507					500 T, ee	2,000 T, ee		80FR36986

Footnotes:

A This water quality criterion was derived from data for arsenic (III), but is applied here to total arsenic, which might imply that arsenic (III) and arsenic (V) are equally toxic to aquatic life and that their toxicities are additive. In the arsenic criteria document (EPA 440/5-84-033, January 1985), Species Mean Acute Values are given for both arsenic (III) and arsenic (V) for five species and the ratios of the SMAVs for each species range from 0.6 to 1.7. Chronic values are available for both arsenic (III) and arsenic (V) for one species; for the fathead minnow, the chronic value for arsenic (V) is 0.29 times the chronic value for arsenic (III). No data are known to be available concerning whether the toxicities of the forms of arsenic to aquatic organisms are additive.

B This criterion has been revised to reflect The Environmental Protection Agency's q1* or RfD, as contained in the Integrated Risk Information System (IRIS) as of May 17, 2002. The fish tissue bioconcentration factor (BCF) from the 1980 Ambient Water Quality Criteria document was retained in each case.

C This criterion is based on carcinogenicity of 10^{-6} risk. As prescribed in Section E of this regulation, application of this criterion for permit effluent limitations requires the use annual average flow or comparable tidal condition as determined by the Department.

D Freshwater and saltwater criteria for metals are expressed in terms of total recoverable metals. As allowed in Section E of this regulation, these criteria may be expressed as dissolved metal for the purposes of deriving permit effluent limitations. The dissolved metal water quality criteria value may be calculated by using these 304(a) aquatic life criteria expressed in terms of total recoverable metal, and multiplying it by a conversion factor (CF). The term "Conversion Factor" (CF) represents the conversion factor for converting a metal criterion expressed as the total recoverable fraction in the water column to a criterion expressed as the dissolved fraction in the water column. (Conversion Factors for saltwater CCCs are not currently available. Conversion factors derived for saltwater CMCs have been used for both saltwater CMCs and CCCs). See "Office of Water Policy and Technical Guidance on Interpretation and Implementation of Aquatic Life Metals Criteria", October 1, 1993, by Martha G. Prothro, Acting Assistant Administrator for Water, available from the Water Resource center, USEPA, 401 M St., SW, mail code RC4100, Washington, DC 20460; and 40CFR§131.36(b)(1). Conversion Factors can be found in Attachment 1 – Conversion Factors for Dissolved Metals.

E The freshwater criterion for this metal is expressed as a function of hardness (mg/L) in the water column. The value given here corresponds to a hardness of 25 mg/L as expressed as $CaCO_3$. Criteria values for other hardness may be calculated from the following: CMC (dissolved) = $\exp\{m_A [\ln(\text{hardness})] + b_A\}$ (CF), or CCC (dissolved) = $\exp\{m_C [\ln(\text{hardness})] + b_C\}$ (CF) and the parameters specified in Attachment 2 – Parameters for Calculating Freshwater Dissolved Metals Criteria That Are Hardness-Dependent. As noted in footnote D above, the values in this appendix are expressed as total recoverable, the criterion may be calculated from the following: CMC (total) = $\exp\{m_A [\ln(\text{hardness})] + b_A\}$, or CCC (total) = $\exp\{m_C [\ln(\text{hardness})] + b_C\}$.

F Freshwater aquatic life values for pentachlorophenol are expressed as a function of pH, and are calculated as follows: CMC = exp(1.005(pH)-4.869); CCC = exp(1.005(pH)-5.134). Values displayed in table correspond to a pH of 7.8.

G This criterion is based on 304(a) aquatic life criterion issued in 1980, and was issued in one of the following documents: Aldrin/Dieldrin (EPA 440/5-80-019), Chlordane (EPA

440/5-80-027), DDT (EPA 440/5-80-038), Endosulfan (EPA 440/5-80-046), Endrin (EPA 440/5-80-047), Heptachlor (440/5-80-052), Hexachlorocyclohexane (EPA 440/5-80-054), Silver (EPA 440/5-80-071). The Minimum Data Requirements and derivation procedures were different in the 1980 Guidelines than in the 1985 Guidelines. For example, a "CMC" derived using the 1980 Guidelines was derived to be used as an instantaneous maximum. If assessment is to be done using an averaging period, the values given should be divided by 2 to obtain a value that is more comparable to a CMC derived using the 1985 Guidelines.

H No criterion for protection of human health from consumption of aquatic organisms excluding water was presented in the 1980 criteria document or in the *1986 Quality Criteria for Water*. Nevertheless, sufficient information was presented in the 1980 document to allow the calculation of a criterion, even though the results of such a calculation were not shown in the document.

I This criterion for asbestos is the Maximum Contaminant Level (MCL) developed under the Safe Drinking Water Act (SDWA) and the National Primary Drinking Water Regulation (NPDWR).

J EPA has not calculated a 304(a) human health criterion for this contaminant. The criterion is the Maximum Contaminant Level developed under the Safe Drinking Water Act (SDWA) and the National Primary Drinking Water Regulation (NPDWR).

K This criterion is based on a 304(a) aquatic life criterion that was issued in the *1995 Updates: Water Quality Criteria Documents for the Protection of Aquatic Life in Ambient Water*, (EPA-820-B-96-001, September 1996). This value was derived using the GLI Guidelines (60FR15393-15399, March 23, 1995; 40CFR132 Appendix A); the difference between the 1985 Guidelines and the GLI Guidelines are explained on page iv of the 1995 Updates. None of the decisions concerning the derivation of this criterion were affected by any considerations that are specific to the Great Lakes.

L The CMC = 1/[(f1/CMC1) + (f2/CMC2)] where f1 and f2 are the fractions of total selenium that are treated as selenite and selenate, respectively, and CMC1 and CMC2 are 185.9 µg/~~l~~L and 12.82 µg/~~l~~L, respectively.

M This criterion applies to total PCBs, (e.g., the sum of all congener or all isomer or homolog or Aroclor analyses.)

N The derivation of the CCC for this pollutant did not consider exposure through the diet, which is probably important for aquatic life occupying upper trophic levels.

O This state criterion is also based on a total fish consumption rate of 0.0175 kg/day.

P This water quality criterion is expressed ~~as µg~~ as µg free cyanide (as CN)/L.

Q This value was announced (61FR58444-58449, November 14, 1996) as a proposed GLI 303 I aquatic life criterion.

S This water quality criterion for selenium is expressed in terms of total recoverable metal in the water column. It is scientifically acceptable to use the conversion factor (0.996 – CMC or 0.922 – CCC) that was used in the GLI to convert this to a value that is expressed in terms of dissolved metal.

T The organoleptic effect criterion is more stringent than the value for priority toxic pollutants.

U This value was derived from data for heptachlor and the criteria document provides insufficient data to estimate the relative toxicities of heptachlor and heptachlor epoxide.

V There is a full set of aquatic life toxicity data that show that DEHP is not toxic to aquatic organisms at or below its solubility limit.

W This value was derived from data for endosulfan and is most appropriately applied to the sum of alpha-endosulfan and beta-endosulfan.

X This criterion is based on a 304(a) aquatic life criterion issued in 1980 or 1986, and was issued in one of the following documents: Aldrin/Dieldrin (EPA440/5-80-019), Chlordane (EPA 440/5-80-027), DDT (EPA 440/5-80-038), Endrin (EPA 440/5-80-047), Heptachlor (EPA 440/5-80-052), Polychlorinated Biphenyls (EPA 440/5- 80-068), Toxaphene (EPA 440/5-86-006). This CCC is based on the Final Residue value procedure in the 1985 Guidelines. Since the publication of the Great Lakes Aquatic Life Criteria Guidelines in 1995 (60FR15393-15399, March 23, 1995), the EPA no longer uses the Final Residue value procedure for deriving CCCs for new or revised 304(a) aquatic life criteria.

Y This water quality criterion is based on a 304(a) aquatic life criterion that was derived using the 1985 Guidelines (*Guidelines for Deriving Numerical National Water Quality Criteria for the Protection of Aquatic Organisms and Their Uses*, PB85-227049, January 1985) and was issued in one of the following criteria documents: Arsenic (EPA 440/5-84-033), Cadmium (~~EPA 440/5-84-032~~ EPA-820-R-16-002), Chromium (EPA 440/5-84-029), Copper (EPA 440/5-84-031), Cyanide (EPA 440/5-84-028), Lead (EPA 440/5-84-027), Nickel (EPA 440/5-86-004), Pentachlorophenol (EPA 440/5-86-009), Toxaphene, (EPA 440/5-86-006), Zinc (EPA 440/5-87- 003).

Z When the concentration of dissolved organic carbon is elevated, copper is substantially less toxic and use of Water-Effect Ratios might be appropriate.

aa The selenium criteria document (EPA 440/5-87-006, September 1987) provides that if selenium is as toxic to saltwater fishes in the field as it is to freshwater fishes in the field, the status of the fish community should be monitored whenever the concentration of selenium exceeds 5.0 µg/L in salt water because the saltwater CCC does not take into account uptake via the food chain.

bb This water quality criterion was derived on page 43 of the mercury criteria document (EPA 440/5-84-026, January 1985). The saltwater CCC of 0.025 ~~u~~µg/L given on page 23 of the criteria document is based on the Final Residue value procedure in the 1985 Guidelines. Since the publication of the Great Lakes Aquatic Life criteria Guidelines in 1995 (60FR15393-15399, March 23, 1995), the EPA no longer uses the Final Residue value procedure for deriving CCCs for new or revised 304(a) aquatic life criteria.

cc This water quality criterion was derived in *Ambient Water Quality Criteria Saltwater Copper Addendum* (Draft, April 14, 1995) and was promulgated in the Interim Final National

Toxics Rule (60FR22228-222237, May 4, 1995).

dd This water quality criterion was derived from data for inorganic mercury (II), but is applied here to total mercury. If a substantial portion of the mercury in the water column is methylmercury, this criterion will probably be under protective. In addition, even though inorganic mercury is converted to methylmercury and methylmercury bioaccumulates to a great extent, this criterion does not account for uptake via the food chain because sufficient data were not available when the criterion was derived.

ee This criterion is a noncarcinogen. As prescribed in Section E of this regulation, application of this criterion for determining permit effluent limitations requires the use of 7Q10 or comparable tidal condition as determined by the Department.

gg This criterion applies to DDT and its metabolites (i.e., the total concentration of DDT and its metabolites should not exceed this value).

hh ~~Although a new RfD is available in IRIS, the surface water criteria will not be revised until the National Primary Drinking Water Regulations: Stage 2 Disinfectants and Disinfection Byproducts Rule (Stage 2 DBPR) is completed, since public comment on the relative source contribution (RSC) for chloroform is anticipated.~~ This recommended water quality criteria for benzene was derived using a toxicity value equal to the reference dose (RfD) multiplied by the relative source contribution (RSC) for noncarcinogenic effects, or a toxicity value equal to 10^{-6} divided by the cancer slope factors (CSF) for carcinogenic effects. The EPA selected a CSF range of 1.5×10^{-2} per mg/kg-d to 5.5×10^{-2} per mg/kg-d for benzene based on a 2000 EPA IRIS assessment. In addition to the toxicity value, the EPA considered body weight, drinking water intake, aquatic trophic levels, fish consumption rate, and bioaccumulation factors in the water quality criteria derivation as identified in EPA 820-R-15-009 (June 2015). Based on these factors the EPA identifies a range of recommended benzene criteria in the Ambient Water Quality Criteria Summary (Section 7.3 of EPA 820-R-15-009). The EPA recommends the lower ambient water quality criteria based on the carcinogenic effects of benzene.

ii Although EPA has not published a completed criteria document for phthalate, it is EPA's understanding that sufficient data exist to allow calculation of aquatic life criteria.

jj This recommended water quality criterion is expressed as total cyanide, even though the IRIS RfD the EPA used to derive the criterion is based on free cyanide. The multiple forms of cyanide that are present in ambient water have significant differences in toxicity due to their abilities to liberate the CN-moiety. Some complex cyanides require even more extreme conditions than refluxing with sulfuric acid to liberate the CN-moiety. Thus, these complex cyanides are expected to have little or no ~~'bioavailability'~~ 'bioavailability' to humans. If a substantial fraction of the cyanide present in a water body is present in a complexed form (e.g., $FE_4[FE(CN)_6]_3$), this criterion may be overly conservative.

kk This recommended water quality criterion was derived using the cancer slope factor of 1.4 (Linear multi-stage model (LMS) exposure from birth).

ll Freshwater copper criteria may be calculated utilizing the procedures identified in EPA-822-R-07-001.

mm HAA5 means five haloacetic acids (monochloracitic acid, dichloroacetic acid, trichloroacetic acid, bromoacetic acid and dibromoaccetic acid).

nn This criterion has been revised to reflect the EPA's cancer slope factor (CSF) or reference dose (RfD), as contained in the Integrated Risk Information System (IRIS) as of (Final FR Notice June 10, 2009). The fish tissue bioconcentration factor (BCF) from the 1980 Ambient Water Quality Criteria document was retained in each case.

R.61-68 APPENDIX, Water Quality Numeric Criteria for the Protection of Aquatic Life and Human Health

Amend Non Priority Pollutants in its entirety to read:

NON PRIORITY POLLUTANTS

	Non Priority Pollutant	CAS Number	Freshwater Aquatic Life		Saltwater Aquatic Life		Human Health			FR Cite/Source
			CMC (µg/L)	CCC (µg/L)	CMC (µg/L)	CCC (µg/L)	For Consumption of: Water & Organism (µg/L)	For Consumption of: Organism Only (µg/L)	MCL (µg/L)	
1	Alachlor								2 M	SDWA
2	Ammonia	7664417	CRITERIA ARE pH AND TEMPERATURE DEPENDENT - SEE DOCUMENT FOR DETAILS C							EPA822-R99-014 EPA440/5-88-004
3	Aesthetic Qualities		NARRATIVE STATEMENT AND NUMERIC CRITERIA – SEE TEXT							Gold Book
4	Atrazine								3 M	SDWA
5	Bacteria		FOR PRIMARY CONTACT RECREATION AND SHELLFISH USES – SEE TEXT							Gold Book
6	Barium	7440393					1,000 A, L		2,000 L	Gold Book
7	Carbofuran	1563662							40 L	SDWA
8	Chlorine	7782505	19	11	13	7.5			G	Gold Book SDWA
9	Chlorophenoxy Herbicide 2, 4, 5, -TP	93721					~~10~~ 100 ~~A,~~ L	400 L	50 L	~~Gold Book~~ 80FR36986 SDWA
10	Chlorophenoxy Herbicide 2, 4-D	94757					~~100~~ 1,300 ~~A,~~ L	12,000 L	70 L	~~Gold Book~~ 80FR36986 SDWA
11	Chlorophyll *a*		NARRATIVE STATEMENT AND NUMERIC CRITERIA – SEE TEXT							State Standard
12	Chloropyrifos	2921882	0.083 F	0.041 F	0.011 F	0.0056 F				Gold Book

	Non Priority Pollutant	CAS Number	Freshwater Aquatic Life		Saltwater Aquatic Life		Human Health			FR Cite/Source
			CMC (µg/L)	CCC (µg/L)	CMC (µg/L)	CCC (µg/L)	For Consumption of: Water & Organism (µg/L)	For Consumption of: Organism Only (µg/L)	MCL (µg/L)	
13	Color		NARRATIVE STATEMENT – SEE TEXT							State Standard
14	Dalapon	75990							200 L	SDWA
15	Demeton	8065483		0.1 E		0.1 E				Gold Book
16	1,2-Dibromo-3-chloropropane (DBCP)	96128							0.2 M	SDWA
17	Di(2-ethylhexyl) adipate	103231							400 L	SDWA
18	Dinoseb	88857							7 L	SDWA
19	Dinitrophenols	25550587					~~69~~ 10 L	~~5,300~~ 1,000 L		~~65FR66443~~ 80FR36986
20	Nonylphenol	1044051	28	6.6	7.0	1.7				71FR9337
21	Diquat	85007							20 L	SDWA
22	Endothall	145733							100 L	SDWA
23	~~Ether, Bis-Chloromethyl~~ Bis(Chloromethyl) Ether	542881					~~0.00010~~ 0.00015 D, M	~~0.00029~~ 0.017 D, M		~~65FR66443~~ 80FR36986

	Non Priority Pollutant	CAS Number	Freshwater Aquatic Life		Saltwater Aquatic Life		Human Health			FR Cite/Source
			CMC (µg/L)	CCC (µg/L)	CMC (µg/L)	CCC (µg/L)	For Consumption of: Water & Organism (µg/L)	For Consumption of: Organism Only (µg/L)	MCL (µg/L)	
24	Cis-1, 2-dichloroethylene	156592							70 L	SDWA
25	Ethylene dibromide								0.05 M	SDWA
26	Fluoride	7681494							4000 L	SDWA
27	Glyphosate	1071836							700 L	SDWA
28	Guthion	86500		0.01 E		0.01 E				Gold Book
29	Hexachlorocyclo-hexane-Technical	~~319868~~ 608731					~~0.0123~~ 0.0066 L	~~0.0414~~ 0.010 L		~~Gold Book~~ 80FR36986
30	Malathion	121755		0.1 E		0.1 E				Gold Book
31	Methoxychlor	72435		0.03 E		0.03 E	~~100~~ 0.02 A, L	0.02 L	40 L	Gold Book 80FR36986 SDWA
32	Mirex	2385855		0.001 E		0.001 E				Gold Book
33	Nitrates	14797558					10, 000 L		10, 000 L	SDWA Gold Book
34	Nitrites	14797650							1,000 L	SDWA
35	Nitrogen, Total		NARRATIVE STATEMENT AND NUMERIC CRITERIA - SEE TEXT							State Standard

	Non Priority Pollutant	CAS Number	Freshwater Aquatic Life		Saltwater Aquatic Life		Human Health			FR Cite/Source
			CMC (µg/L)	CCC (µg/L)	CMC (µg/L)	CCC (µg/L)	For Consumption of: Water & Organism (µg/L)	For Consumption of: Organism Only (µg/L)	MCL (µg/L)	
36	Nitrosamines						0.0008 L	1.24 L		Gold Book
37	Nitrosodibutylamine, N	924163					0.0063 A, M	0.22 A, M		65FR66443
38	Nitrosodiethylamine, N	55185					0.0008 A, M	1.24 A, M		Gold Book
39	Nitrosopyrrolidine, N	930552					0.016 M	34 M		65FR66443
40	Oil and Grease		NARRATIVE STATEMENT – SEE TEXT							Gold Book
41	Oxamyl	23135220							200 L	SDWA
42	Oxygen, Dissolved	7782447	WARMWATER, COLDWATER, AND EXCEPTIONS FOR NATURAL CONDITIONS - SEE TEXT K							Gold Book State Standard
43	Diazinon	333415	0.17	0.17	0.82	0.82				71FR9336
44	Parathion	56382	0.065 H	0.013 H						Gold Book
45	Pentachlorobenzene	608935					~~1.4~~ 0.1 E	~~1.5~~ 0.1 E		~~65FR66443~~ 80FR36986
46	pH		SEE TEXT I							Gold Book State Standard
47	Phosphorus, Total		NARRATIVE STATEMENT AND NUMERIC CRITERIA - SEE TEXT							State Standard

	Non Priority Pollutant	CAS Number	Freshwater Aquatic Life		Saltwater Aquatic Life		Human Health			FR Cite/Source
			CMC (µg/L)	CCC (µg/L)	CMC (µg/L)	CCC (µg/L)	For Consumption of: Water & Organism (µg/L)	For Consumption of: Organism Only (µg/L)	MCL (µg/L)	
48	Picloram	1918021							500 L	SDWA
49	Salinity		NARRATIVE STATEMENT - SEE TEXT							Gold Book
50	Simazine	122349							4 L	SDWA
51	Solids,Suspended,and Turbidity		NARRATIVE STATEMENT AND NUMERIC CRITERIA - SEE TEXT							Gold Book State Standard
52	Styrene	100425							100 L	SDWA
53	Sulfide-Hydrogen Sulfide	7783064		2.0 E		2.0 E				Gold Book
54	Tainting Substances		NARRATIVE STATEMENT - SEE TEXT							Gold Book
55	Temperature		SPECIES DEPENDENT CRITERIA - SEE TEXT J							Red Book
56	1, 2, 4, 5-Tetrachlorobenzene	95943					~~0.97~~ 0.03 D	~~1.1~~ 0.03 D		~~65FR66443~~ 80FR36986
57	Tributyltin (TBT)	688733	0.46	0.063	0.37	0.010				EPA 822-F-00-008
58	2, 4, 5-Trichlorophenol	95954					~~1,800~~ 300 B, D	~~3,600~~ 600 B, D		~~65FR66443~~ 80FR36986
59	Xylenes, Total								10, 000 L	SDWA

	Non Priority Pollutant	CAS Number	Freshwater Aquatic Life		Saltwater Aquatic Life		Human Health			FR Cite/Source
			CMC (µg/L)	CCC (µg/L)	CMC (µg/L)	CCC (µg/L)	For Consumption of: Water & Organism (µg/L)	For Consumption of: Organism Only (µg/L)	MCL (µg/L)	
60	Uranium								30	SDWA
61	Beta particles and photon emitters								4 Millirems/yr	SDWA
62	Gross alpha particle activity								15 picocuries per liter (pCi/l)	SDWA
63	Radium 226 and Radium 228 (combined)								5 pCi/l	SDWA

Footnotes:

A This human health criterion is the same as originally published in the Red Book which predates the 1980 methodology and did not utilize the fish ingestion BCF approach. This same criterion value is now published in the Gold Book.

B The organoleptic effect criterion is more stringent than the value presented in the non priority pollutants table.

C According to the procedures described in the *Guidelines for Deriving Numerical National Water Quality Criteria for the Protection of Aquatic Organisms and Their Uses*, except possibly where a very sensitive species is important at a site, freshwater aquatic life should be protected if both conditions specified in Attachment 3 - Calculation of Freshwater Ammonia Criterion are satisfied.

D This criterion has been revised to reflect ~~The~~ the Environmental Protection Agency's q1* or RfD, as contained in the Integrated Risk Information System (IRIS) as of April 8, 1998. The fish tissue bioconcentration factor (BCF) used to derive the original criterion was retained in each case.

E The derivation of this value is presented in the Red Book (EPA 440/9-76-023, July, 1976).

F This value is based on a 304(a) aquatic life criterion that was derived using the 1985 Guidelines (*Guidelines for Deriving Numerical National Water Quality Criteria for the Protection of Aquatic Organisms and Their Uses*, PB85-227049, January 1985) and was issued in the following criteria document: Chloropyrifos (EPA 440/5-86-005).

G A more stringent Maximum Residual Disinfection Level (MRDL) has been issued by EPA under the Safe Drinking Water Act. Refer to S.C. Regulation 61-58, *State Primary Drinking Water Regulations*.

H This value is based on a 304(a) aquatic life criterion that was issued in the *1995 Updates: Water Quality Criteria Documents for the Protection of Aquatic Life in Ambient Water* (EPA-820-B-96-001). This value was derived using the GLI Guidelines (60FR15393-15399, March 23, 1995; 40CFR132 Appendix A); the differences between the 1985 Guidelines and the GLI Guidelines are explained on page iv of the 1995 Updates. No decision concerning this criterion was affected by any considerations that are specific to the Great Lakes.

I South Carolina has established some site-specific standards for pH. These site-specific standards are listed in S.C. Regulation 61-69, *Classified Waters*.

J U.S. EPA, 1976, Quality Criteria for Water 1976.

K South Carolina has established numeric criteria in Section G for waters of the State based on the protection of warmwater and coldwater species. For the exception to be used for waters of the State that do not meet the numeric criteria established for the waterbody due to natural conditions, South Carolina has specified the allowable deficit in Section D.4. and used the following document as a source. U.S. EPA, 1986, Ambient Water Quality Criteria for Dissolved Oxygen, EPA 440/5-86-003, National Technical Information Service, Springfield, VA. South Carolina has established some site-specific standards for DO. These site-specific standards are listed in S.C. Regulation 61-69, *Classified Waters*.

L This criterion is a noncarcinogen. As prescribed in Section E of this regulation, application of this criterion for determining permit effluent limitations requires the use of 7Q10 or comparable tidal condition as determined by the Department.

M This criterion is based on an added carcinogenicity risk. As prescribed in Section E of this regulation, application of this criterion for permit effluent limitations requires the use of annual average flow or comparable tidal condition as determined by the Department.

R.61-68 APPENDIX, Water Quality Numeric Criteria for the Protection of Aquatic Life and Human Health

Amend Attachment 2 - Parameters for Calculating Freshwater Dissolved Metals Criteria That Are Hardness-Dependent in its entirety to read:

Attachment 2 - Parameters for Calculating Freshwater Dissolved Metals Criteria That Are Hardness-Dependent

Chemical	m_A	b_A	m_C	b_C	Freshwater Conversion Factors (CF)	
					Acute	Chronic
Cadmium	~~1.0166~~ 0.9789 A	~~- 3.924~~ 3.866 A	~~0.7409~~ 0.7977 A	~~- 4.719~~ 3.909 A	1.136672-[ln (hardness)(0.041838)]	1.101672-[ln (hardness)(0.041838)]
Chromium III	0.8190	3.7256	0.8190	0.6848	0.316	0.860
Copper	0.9422	-1.700	0.8545	-1.702	0.960	0.960
Lead	1.273	-1.460	1.273	-4.705	1.46203-[ln (hardness)(0.145712)]	1.46203-[ln (hardness)(0.145712)]
Nickel	0.8460	2.255	0.8460	0.0584	0.998	0.997
Silver	1.72	-6.52	--	--	0.85	--
Zinc	0.8473	0.884	0.8473	0.884	0.978	0.986

Hardness-dependent metals criteria may be calculated from the following:
CMC (total) = $\exp\{m_A [\ln(\text{hardness})] + b_A\}$, or CCC (total) = $\exp\{m_C [\ln(\text{hardness})] + b_C\}$
CMC (dissolved) = $\exp\{m_A [\ln(\text{hardness})] + b_A\}$ (CF), or CCC (dissolved) = $\exp\{m_C [\ln(\text{hardness})] + b_C\}$ (CF).

Footnotes:

A This parameter was issued by the EPA in Aquatic Life Ambient Water Quality Criteria Cadmium - 2016 (EPA-820-R-16-002).

ATTACHMENT D
DRAFT STATE REGISTER NOTICE OF PROPOSED REGULATION
PROPOSED AMENDMENT OF R.61-68, WATER CLASSIFICATIONS AND STANDARDS
September 8, 2016

Document No.
DEPARTMENT OF HEALTH AND ENVIRONMENTAL CONTROL
CHAPTER 61
Statutory Authority: 1976 Code Section 48-1-10 et seq.

R.61-68, Water Classifications and Standards

Preamble:

The Department proposes to amend R.61-68 to strengthen and improve the existing regulation and make appropriate revisions of the State's water quality standards in accordance with 33 U.S.C. Section 303(c)(2)(B) of the Federal Clean Water Act ("CWA"). In accordance with Section 303(c)(2)(B) of the CWA, the Department reviews, and amend at its discretion, this regulation once every three years in order to incorporate desirable most recently published Federal criterion recommendations and guidance. Hence, this review process is often referred to as the "triennial review." The Department proposes to adopt a revised standard for ambient water quality criteria for the protection of human health for ninety-four chemical pollutants, and a revised standard for aquatic life water quality criteria for cadmium to reflect the most current final published criteria in accordance with Sections 304(a) and 307(a) of the CWA.

A Notice of Drafting was published in the State Register on February 26, 2016. The notice was placed on the Department's water quality standards webpage and circulated to stakeholders and other interested parties. The Notice of Drafting was also published on the Department's Regulatory Page in its DHEC Regulation Development Update. Comments were received and used in the drafting of the proposed regulation.

Discussion of Proposed Revisions

The Discussion of Proposed Revisions is submitted as Attachment B and is omitted here to conserve space in the agenda item.

Notice of Staff Informational Forum and Public Comment Period:

Staff of the Department of Health and Environmental Control invites the public and regulated community to attend a staff-conducted informational forum to be held on October 24, 2016, at 1:00 p.m. in Peeples Auditorium, third floor of the Sims Building at the South Carolina Department of Health and Environmental Control, 2600 Bull Street, Columbia, SC. The purpose of the forum is to answer questions, clarify any issues, and receive comments from interested persons on the proposed amendments to R.61-68, Water Classifications and Standards.

Interested persons are also provided an opportunity to submit written comments on the proposed amendments by writing to Andrew Edwards at Bureau of Water, South Carolina Department of Health and Environmental Control, 2600 Bull Street, Columbia, SC 29201; by email at edwardaj@dhec.sc.gov or fax at (803) 898-4215.

Comments received at the forum and/or submitted in writing by the close of the comment period on October 24, 2016, no later than 5:00 p.m. shall be considered by staff in formulating the final proposed regulations for public hearing on December 8, 2016, as noticed below. Comments received shall be submitted in a Summary

of Public Comments and Department Responses for the Board of Health and Environmental Control's consideration at the public hearing.

Copies of the proposed amendments for public comment as published in the State Register on September 23, 2016, may be obtained in the Department's Regulation Development Update on the Department's Regulatory Internet site under the Water category at: http://www.dhec.sc.gov/Agency/RegulationsAndUpdates/RegulationDevelopmentUpdate/. A copy can also be obtained by contacting Andrew Edwards, Water Quality Standards Coordinator at the above address or by calling (803) 898-1271, or by email at edwardaj@dhec.sc.gov.

Notice of Public Hearing and Opportunity for Public Comment:

Interested members of the public and regulated community are invited to make oral or written comments on the proposed amendments to R.61-68, Water Classifications and Standards at a public hearing to be conducted by the Board of the Department of Health and Environmental Control at its regularly scheduled meeting on December 8, 2016, at 10:00 a.m. The public hearing will be held in room 3420 (Board Room), Third Floor, Aycock Building of the South Carolina Department of Health and Environmental Control, 2600 Bull Street, Columbia, South Carolina. Notice of cancellation or any change in meeting times will be noticed in the Board meeting agenda at least 24 hours in advance of the meeting. The Board agenda is published by the Department of Health and Environmental Control and can be accessed on the Internet at http://www.scdhec.gov/Agency/docs/AGENDA.pdf. Information on the public hearing can be obtained by calling the Clerk of the Board at (803) 898-3309. Persons desiring to make oral comments at the hearing are asked to limit their statements to five minutes or less and, as a courtesy, are asked to provide written copies of their presentation for the record. Due to admittance procedures at the DHEC Building, all visitors should enter through the Bull Street entrance and register at the front desk.

Preliminary Fiscal Impact Statement:

No costs to the State or significant cost to its political subdivisions as a whole should be incurred by these amendments. See Statement of Need and Reasonableness below.

Statement of Need and Reasonableness:

The Statement of Need and Reasonableness is submitted as Attachment A and is omitted here to conserve space in the agenda item.

Statement of Rationale:

The Statement of Rationale is submitted as Attachment A and is omitted here to conserve space in the agenda item.

Text of Proposed Amendment for Public Notice and Comment

The Text of the Proposed Amendment for Public Notice and Comment is submitted as Attachment C and is omitted here to conserve space in the agenda item.

ATTACHMENT E
SUMMARY OF PUBLIC COMMENTS DEPARTMENTAL RESPONSES FOR THE REVISION OF
Regulation 61-68, Water Classifications and Standards
September 8, 2016

Deletions are shown with ~~Strikethrough~~ print.
Additions are shown with Underline print.

Comment #1:

Reference &Topic:	*Commenter:*
Nutrient Standards	Chris Starker, Upstate Forever Gerritt Jöbsis, American Rivers Ann S. Timberlake, Conservaton Voters of South Carolina Bill Stangler, Congaree Riverkeeper Emma Gerald Boyer, Waccamaw Riverkeeper Katie Zimmerman, Coastal Conservation League

Comments Received:
The Department should establish instream nutrient standards in order to more fully protect surface waters.

Department Response to Comment #1

The Department completed the process of promulgating numeric nutrient criteria for lakes of forty acres or more in 2001. These lake standards are implemented with TMDLs and permit limits on dischargers to protect those downstream uses (lakes).

The Department has a phased nutrient promulgation schedule to focus initially on criteria for estuaries and then develop criteria for rivers and streams. The Department currently plans to move forward with numeric nutrient criteria for estuaries during 2017 and will address rivers and streams during the subsequent triennial review period. The reason for focusing initially on criteria for estuaries is that we believe we have gathered substantial data to support that effort and this data is currently lacking to support the development of nutrient criteria for rivers and streams. This phased approach is part of a plan submitted to EPA consistent with the CWA. The Department proposes no changes to Regulation 61-68 at this time.

Comment #2:

Reference &Topic:	*Commenter:*
Flow Standards	Chris Starker, Upstate Forever Gerritt Jöbsis, American Rivers Ann S. Timberlake, Conservaton Voters of South Carolina Bill Stangler, Congaree Riverkeeper Emma Gerald Boyer, Waccamaw Riverkeeper Katie Zimmerman, Coastal Conservation League

Comments Received:

The Department should develop narrative and numeric standards for stream flow that would fully protect the waters of the State. The Department should convene a stakeholder group to develop narrative and numeric standards for stream flow as part of the 2016 Triennial Review.

Department Response to Comment #2
South Carolina, under the South Carolina Surface Water Withdrawal, Permitting Use, and Reporting Act, effective January 1, 2011, has already set protective stream flow criteria and a permitting program for water withdrawals and uses of surface waters. This has previously been addressed within the scope of Regulation 61-119, Surface Water Withdrawal, Permitting, and Reporting.

Comment #3:

Reference &Topic:	*Commenter:*
Updated Human Health Criteria	Chris Starker, Upstate Forever Gerritt Jöbsis, American Rivers Ann S. Timberlake, Conservaton Voters of South Carolina Bill Stangler, Congaree Riverkeeper Emma Gerald Boyer, Waccamaw Riverkeeper Katie Zimmerman, Coastal Conservation League
Comments Received: The Department should update ambient water quality criteria for chemical pollutants.	
Department Response to Comment #3	
The Department proposes amending the text of Regulation 61-68 APPENDIX, Water Quality Numeric Criteria for the Protection of Human Health to include the updated criteria for the 94 chemical pollutants. The text of the proposed amendment is submitted as Attachment C.	

Comment #4:

Reference &Topic:	*Commenter:*
Water Quality Standards Regulation	Chris Starker, Upstate Forever Gerritt Jöbsis, American Rivers Ann S. Timberlake, Conservaton Voters of South Carolina Bill Stangler, Congaree Riverkeeper Emma Gerald Boyer, Waccamaw Riverkeeper Katie Zimmerman, Coastal Conservation League
Comments Received: The Department should review and revise Water Quality Standards to improve the effectiveness in restoring and maintaining water quality in waters of the U.S. for consistency with recent EPA regulations.	
Department Response to Comment #4	
The Department has reviewed Water Quality Standard Regulatory Revisions and determined that no changes to Regulation 61-68 are necessary in order to stay current with EPAs recent regulation.	

Comment #5:

Reference &Topic:	*Commenter:*
Shem Creek Reclassification	Andrew Wunderley, Esq., Charleston Waterkeeper Cheryl Carmack
Comments Received:	

The Department should reclassify Shem Creek from Class SB to Class SA. Class SA affords a stronger safeguard for primary and secondary recreational uses that is more protective of public health and safety. Shem Creek's current uses are now dominated by primary and secondary contact recreation.
Department Response to Comment #5
The Department will consider this request for reclassification outside the scope of this triennial review.

Comment #6:

Reference &Topic:	*Commenter:*
Beach Action Value	Andrew Wunderley, Esq., Charleston Waterkeeper Cheryl Carmack
Comments Received: The Department should adopt the bright-line standard for ocean beach swim advisories prescribed in Regulation 61-68(E)(14)(d)(5). The Department's quality assurance project plan for its Beach Monitoring Program outlines a two-step process for issuing a swim advisory. An advisory is only issued automatically when a single sample exceeds 501 MPN/100 mL. Additionally, an advisory may also be issued when two consecutive samples exceed 104 MPN/100 mL. The Department's beach swim advisory rubric should be more protective of public health and safety. Establishing a bright-line advisory threshold of 104 MPN/100 mL would also bring the Department's swim advisory practice closer to the early warning Beach Action Values outlined in EPA's 2012 Recreational Water Quality Criteria. EPA's Beach Action Values of 60 and 70 MPN/100 mL are based on new epidemiological studies that provide a better picture of the risk of illness associated with swimming in contaminated water and are specifically designed for making advisory decisions.	
Department Response to Comment #6	
The Department's assessment of enterococci for the purposes of issuing swimming advisories uses the current standard of 104/100 mL. Any change in the process for issuing swimming advisories would be addressed in the quality assurance project plan for the Department's Beach Monitoring Program. EPA does not require states to include a Beach Action Value (BAV) in state water quality standards. The use of a BAV of 70/100 mL would result in a significant increase in the sampling effort due to resamples, with an insignificant increase in beach advisories, and therefore does not warrant the change. The Department proposes no changes to Regulation 61-68(E)(14)(d)(5).	

Comment #7:

Reference &Topic:	*Commenter:*
Cadmium Criteria	Larry E. Hatcher, Duke Energy
Comments Received: The Department should adopt the updated recommended aquatic life ambient water quality criteria for cadmium that the EPA published on April 4, 2016.	
Department Response to Comment #7	
The Department proposes amending the text of Regulation 61-68 APPENDIX, Water Quality Numeric Criteria for the Protection of Aquatic Life to include the updated criteria for cadmium. The text of the proposed amendment is submitted as Attachment C.	

ATTACHMENT F

STATE REGISTER NOTICE OF DRAFTING
PROPOSED AMENDMENT OF R.61-68, WATER CLASSIFICATIONS AND STANDARDS
February 26, 2016

DEPARTMENT OF HEALTH AND ENVIRONMENTAL CONTROL
CHAPTER 61
Statutory Authority: 1976 Code Sections 48-1-10 et seq.

Notice of Drafting:

The Department of Health and Environmental Control proposes to amend specific sections of Regulation 61-68, Water Classifications and Standards, and Regulation 61-69, Classified Waters. Interested persons are invited to submit their views and recommendations in writing to Kyle D. Maurer, Water Quality Standards Coordinator, Bureau of Water, 2600 Bull Street, Columbia, South Carolina 29201 or via e-mail at maurerkd@dhec.sc.gov. To be considered, written comments must be received no later than 5:00 p.m. on March 28, 2016, the close of the drafting comment period.

Synopsis:

Section 303(c)(2)(B) of the Federal Clean Water Act (CWA) requires that South Carolina's water quality standards be reviewed and revised, where necessary, at least once every three years for the purposes of considering the Environmental Protection Agency's (EPA) most recent numeric and narrative criteria and comply with recent Federal regulatory revisions and recommendations. This process is commonly referred to as the "triennial review," and the Department has prepared this Notice of Drafting for the required triennial review process. The Department proposes amending R.61-68 and R.61-69 with respect to the following topics:

Review and, where appropriate, adoption of updated Federal water quality criteria to reflect the most current final published numeric criteria according to Section 304(a) and Section 307(a) of the CWA. EPA has published the following numeric criteria guidance documents: Final Updated Ambient Water Quality Criteria for the Protection of Human Health, Federal Register Volume 80, Number 124 (June 2015). The June 2015 publication revised human health water quality criteria for ninety-four (94) chemical pollutants based on new assumptions for exposure inputs (body weight, drinking water consumption, and fish consumption), bioaccumulation factors, toxicity values, and relative source contributions.

Review and, where appropriate, adoption of requirements to reflect EPA's Final Rulemaking to Update the National Water Quality Standards Regulation. The final rule was published in the Federal Register on August 21, 2015 (80 FR 51019) and may be found in 40 CFR 131. The State's currently promulgated Water Quality Standards meet the requirements of the rulemaking.

The Department may make additional changes consistent with the goals of the Clean Water Act. The Department may also make stylistic changes to amend both regulations for internal consistency; clarification in wording; corrections of references, grammatical errors, outlining/codification and such other changes as may be necessary to improve the overall quality of the regulation pursuant to regulation drafting standards required by the Legislative Council.

Legislative review will be required.